Course Outline

MATS4503

Professional Skills

Materials Science and Engineering

Science

T2, 2019
1. Staff

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Email</th>
<th>Consultation times and locations</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Convener</td>
<td>Dr Owen Standard</td>
<td><a href="mailto:o.standard@unsw.edu.au">o.standard@unsw.edu.au</a></td>
<td>Room 243, School of Materials Science and Engineering (Building E10), by appointment</td>
<td>Phone: 9385 4437</td>
</tr>
<tr>
<td>Hons project Coordinator</td>
<td>Dr Kevin Laws</td>
<td><a href="mailto:k.laws@unsw.edu.au">k.laws@unsw.edu.au</a></td>
<td>Room 301, School of Materials Science and Engineering (Building E10), by appointment</td>
<td>Phone: 9385 5234</td>
</tr>
</tbody>
</table>

2. Course information

Units of credit: 6

Related courses: This course is not stand-alone. Students undertaking Honours in the BSc (Materials Science) program are required to complete 48UOC comprising of MATS4505 Honours Project (12 UOC) once per term for three terms, MATS4503 Professional Skills (6 UOC) in T2, and MATS4504 Research Training (6 UOC) in T1. The honours program is built on the Materials and Science courses completed in the students’ previous 3 years of BSc study in the Materials Science discipline (or similar).

Teaching times and locations: By private study, with input from course coordinator and thesis supervisor

2.1 Course summary

This course provides students with formal training in professional communication, writing skills, project planning, data analysis, intellectual property, risk management, and workplace health and safety. These skills directly underpin the Honours research thesis (MATS4504 and MATS4505) and provide essential generic skills for any science graduate.

The course is only available to students enrolled in the School of Materials Science and Engineering Honours Program and must be taken in T2 in conjunction with a Science Honours research project in the School of Materials Science and Engineering. The School’s Honours Coordinator must approve enrolment.

2.2 Course aims

The objective of this course is to develop skills in professional communication, writing, project planning, data analysis, intellectual property, risk management, and workplace health and safety. These skills are taught in the context of the Honours research project in the 4505 BSc Honours program in Materials Science and Engineering.
2.3 Course learning outcomes (CLO)

At the successful completion of this course you (the student) should be able to:

1. Carry out research effectively, including the ability to work independently, design and carry out experiments, collect and analyse data, and solve problems.
2. Understand and apply advanced materials concepts and knowledge to solve problems.
3. Develop and manage a project effectively, including the ability to plan and execute a significant project applying relevant methods and knowledge.
4. Communicate scientific information in a written and spoken form.
5. Work effectively within the regulatory frameworks relevant to Materials Science, including workplace health and safety and ethics.

2.4 Relationship between course and program learning outcomes and assessments

<table>
<thead>
<tr>
<th>Course Learning Outcome (CLO)</th>
<th>LO Statement</th>
<th>Program Learning Outcome (PLO)</th>
<th>Related Tasks &amp; Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLO 1</td>
<td>Carry…</td>
<td>3, 5, 6 &amp; 7</td>
<td>4</td>
</tr>
<tr>
<td>CLO 2</td>
<td>Understand…</td>
<td>3, 5, 6 &amp; 7</td>
<td>2, 3 &amp; 4</td>
</tr>
<tr>
<td>CLO 3</td>
<td>Develop…</td>
<td>3, 5, 6 &amp; 7</td>
<td>4</td>
</tr>
<tr>
<td>CLO 4</td>
<td>Communicate…</td>
<td>1</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>CLO 5</td>
<td>Work…</td>
<td>4 &amp; 8</td>
<td>2</td>
</tr>
</tbody>
</table>

3. Strategies and approaches to learning

3.1 Learning and teaching activities

(Based on UNSW Learning Guidelines):

The course is designed for you to actively engage in the learning process and analyse and synthesise the content in a real-world environment. Students are actively engaged in the learning process.

It is expected that, in addition to attending classes, students read, write, discuss, and are engaged in solving problems in the context of their Honours research project.

Learning is more effective when students’ prior experience and knowledge are recognised and built on – the course is built on prior courses in materials science, and science courses more generally, undertaken in the 3970 BSc program.

Students become more engaged in the learning process if they can see the relevance of their studies to professional and disciplinary contexts – students will be asked to interpret literature and present scientific information relevant to their Honours research project.
3.2 Expectations of students

- Students must attend at least 80% of all classes
- Students should complete all assessment and milestone tasks and submit them on time.
- Students are expected to participate in online discussions through the Moodle page
- Each student is expected to maintain a regular dialogue with their supervisor (for example by weekly meetings) about their project
4. Course schedule and structure

This course is conducted through private study, you are expected to dedicate 150 hours of private study to complete assessments.

5. Assessment

<table>
<thead>
<tr>
<th>Assessment task</th>
<th>Description</th>
<th>Weight</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management Plan:</td>
<td>Students are required to formulate a project management plan for the research project detailing the following planning aspects of the project: scope and major objectives, human-equipment-consumable resources needed, project milestones and schedule, and auditing process.</td>
<td>20%</td>
<td>Week 4</td>
</tr>
<tr>
<td>Workplace Health and Safety Quiz:</td>
<td>Students will also need to demonstrate competence in workplace health and safety and ethics relevant to professional practice as a materials scientist. • School WHS Induction Session • UNSW Online Safety for Students Course • Training sessions and WHS Documentation specific to their experimental work.</td>
<td>20%</td>
<td>Prior to experimental work</td>
</tr>
<tr>
<td>Data Analysis Report and Presentation:</td>
<td>Part 1: Students are required to research and give a short formal presentation on a topic allocated by the lecturer. The presentation will be critiqued by the lecturer and by students in the audience. The presentation gives students the opportunity to practice giving a formal presentation utilising the skills and techniques taught in class and will provide constructive advice to students on ways to improve their public speaking.</td>
<td>40% (20% each)</td>
<td>TBA</td>
</tr>
<tr>
<td></td>
<td>Part 2: Students are required to systematically analyse the introduction, experimental procedure, and results of a published experiment provided by the lecturer. Students will: critique the introduction and rationale of the experiment; comment on the experimental designed used in the work; identify trends and their significance in the experimental data; and formulate a coherent discussion of the results as well as a conclusion. Following submission of their report, students will be given opportunity to compare their work with that actually published for the original work. This assessment task will also give student opportunity to practice writing skills taught in the course.</td>
<td></td>
<td>Week 6</td>
</tr>
<tr>
<td>Curriculum Vitae:</td>
<td>In consultation with UNSW Careers &amp; Employment, students are to revise their resume and to prepare a cover letter to apply (real or fictitiously) for a real position recently advertised.</td>
<td>20%</td>
<td>Week 10</td>
</tr>
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</table>
Students will be required to attend a 20-minute interview with UNSW Careers & Employment during session (organised outside class).

Further information
UNSW grading system: https://student.unsw.edu.au/grades
UNSW assessment policy: https://student.unsw.edu.au/assessment

5.2 Assessment criteria and standards
Assessment criteria will be available on the course Moodle page

Students who fail to satisfactorily complete all of the assessment tasks but achieve a final mark >50% for the course, may still be awarded a UF (Unsatisfactory Fail) for the course. Please refer to the UNSW guide to grades: https://student.unsw.edu.au/grades

5.3 Submission of assessment tasks

- Assessment tasks must be completed and submitted by the dates set. All submitted work must contain a completed student declaration sheet. Unless stated otherwise, submission of assessment tasks is done by emailing to the Course Coordinator (o.standard@unsw.edu.au). Marked work will be returned within two weeks of submission.

- UNSW operates under a Fit to Sit/Submit rule for all assessments. If a student wishes to submit an application for special consideration for an exam or assessment, the application must be submitted prior to the start of the exam or before an assessment is submitted. If a student sits the exam/ submits an assignment, they are declaring themselves well enough to do so. Information on this process can be found here: https://student.unsw.edu.au/special-consideration. Medical certificates or other appropriate documents must be included. Students should also advise the lecturer of the situation.

- Unless otherwise specified in the task criteria, all assignments must be uploaded via Moodle prior to the due date for submission.

- Assessments submitted after the due date for submission will receive a 10% of maximum grade penalty for every day late, or part thereof.

- Students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course coordinator prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit: https://student.unsw.edu.au/disability. Early notification is essential to enable any necessary adjustments to be made.

5.4. Feedback on assessment

Project Management Plan: Marked report is returned to students and discussed with supervisor.

Workplace Health and Safety Quiz: Satisfactory completion of online training; written WHS documents discussed with supervisor.

Presentation: Immediate feedback following presentation. Formal marking criteria to assess presentation.

Data Analysis report: Written marking and comments from lecturer as per rubric
Curriculum Vitae: Written marking and comments from lecturer as per rubric. Formal feedback from UNSW Careers & Employment.

6. Academic integrity, referencing and plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else’s words, ideas or research. Not referencing other people’s work can constitute plagiarism.

Further information about referencing styles can be located at https://student.unsw.edu.au/referencing.

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others’ ideas should be appropriately acknowledged. If you don’t follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and plagiarism can be located at:

- The Current Students site https://student.unsw.edu.au/plagiarism, and
- The ELISE training site http://subjectguides.library.unsw.edu.au/elise/presenting

The Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct.

7. Readings and resources

There are no prescribed or recommended readings or resources for this course.

8. Administrative matters

School Office: Room 137, Building E10 School of Materials Science and Engineering
School Website: http://www.materials.unsw.edu.au/
Faculty Office: Robert Webster Building, Room 128
Faculty Website: http://www.science.unsw.edu.au/

9. Additional support for students

- The Current Students Gateway: https://student.unsw.edu.au/
- Academic Skills and Support: https://student.unsw.edu.au/academic-skills
- Student Wellbeing, Health and Safety: https://student.unsw.edu.au/wellbeing
- Disability Support Services: https://student.unsw.edu.au/disability-services
- UNSW IT Service Centre: https://www.it.unsw.edu.au/students/index.html

• Special Consideration: https://student.unsw.edu.au/special-consideration